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With the author's kind Regards

NOTES ON CASES

OF

GUNSHOT AND SWORD WOUNDS

ON THE

N. W. FRONTIER.

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THE following is a short account of some cases of gunshot and sword wounds which were treated in the Dera Ismail Khan dispensary during the month of December, 1876. Owing to great pressure of work at the time, the notes have been very imperfectly recorded.

On November 26th, 1876, a fight took place in the Sulimán Range of hills beyond our border between the Sulimán Kheyls and Nássurs, two powerful tribes of Povindahs, who were marching horses down towards Hindustán. The fighting lasted from sunrise to sunset, and the casualties on both sides amounted to 14 killed and 12 wounded. Of the wounded, 7 men were admitted into the Sudder Dispensary, which is at least 100 miles distant from the scene of the fight. A few were admitted into the Tánk dispensary which is close to the border. One of these, a bullet wound in the chest severely injuring the lung, proved fatal after some days.

Sword wound in skull.

CASE I.—Mahomed Azím, ætat 25, was admitted on December 2nd, 1876. One of his tribe had brought him in in a kajáwa, a very rough mode of conveyance for a wounded man. He appeared in vigorous

[1] X a kind of pannier slung across a camel in which a man can lie down

health and his spirits were exceedingly good. His wounds, which were inflicted at close quarters, were as follow:—On the left side of the arch of the skull a clean sword cut, four inches in length, had completely divided transversely the scalp and the whole thickness of the skull, exposing in its length the dura mater; the pulsations of the brain being perfectly distinct underneath. The dura mater was apparently uninjured. A quantity of hair was imbedded in the edges of the wound and in the somewhat offensive pus covering in the dura mater. The wound had been rudely drawn together with green string, and the whole head was covered with a portion of sheepskin shaped like a skull-cap which, according to the Povindahs' way of treatment, was renewed every second or third day. In addition to this injury, he had received three very severe sword cuts on the left arm, which he had raised to guard his head, all of which gaped in a ghastly manner. The centre wound was very severe, and here two-thirds of the humerus had been cut through. He had no other injuries. When cut down he became insensible and remained so for several hours. At the time of admission his faculties were perfect, and no symptom of paralysis was present. After removing all the imbedded hairs from the surface of the dura mater, the wounds were dressed with carbolic oil. On the following day he apparently was in the best of health and spirits, and when visited in the morning was eating some roast kid with his comrade. The discharge from the wound in the skull was offensive. The next morning slight fever and shiverings came on, his look was restless and anxious, and he could not eat his food. As evening advanced the fever increased and some convulsive action of the right arm set in. During that night he became insensible, the convulsive action of the right arm increased violently, the pupil of the right eye became dilated, the dura mater gave way, and when the dressings were removed in the morning the brain substance mixed with blood was found issuing with each pulsation of the

heart. This symptom continued until at least one-eighth part of the brain must have escaped, and the patient gradually got worse and died. No *post mortem* could be obtained. Unfortunately for this man, a patient in the dispensary with a severe scalp wound had been attacked a few days previously with erysipelas of the head, and it is very probable that infection from him may have been the cause of fatal inflammation by which the dura mater was opened; for, notwithstanding the length of time that had elapsed, and the long journey that he had gone through in a jolting kajáwa after the receipt of the injury, he did not present, on admission, any symptom of brain injury.

Bullet wound in arm.

Case II.—Alam Khán, ætat 35, was admitted on the 3rd December, 1876, with a bullet wound in the left arm, the bullet having lodged. This man was taking deliberate aim at an adversary on the opposite hill, his left arm being somewhat squared, when he was struck by a bullet fired from his left front. A small wound was visible at the back of the elbow about two inches above the joint. The arm and forearm were swollen and slightly painful, but otherwise he had no constitutional symptoms. His friends, according to their custom, had immediately after the fight probed the wound with a straw, and they affirmed that the bullet passed upwards and inwards towards the armpit and that the bullet was lodged there. A large bullet probe was carefully passed and discovered exposed bone. The course of the probe was upwards and inwards for five or six inches towards the armpit, where it terminated in a cul-de-sac on the inner side of the arm. The bullet could not be found. The man and his friends, however, persisted that the bullet was lodged here, and he afterwards complained of constant pain in this spot where some thickening was felt which he believed was caused by the pressure of the bullet. Loose bone was also felt near the external wound.

In order if possible to determine where the bullet lay, the next day the patient was placed under chloroform and the wound enlarged so as easily to admit the finger. The lower end of the humerus was found considerably splintered, and two or three small pieces of bone were removed. Still, although a prolonged examination was made with both the finger and probe, the position of the bullet could not be ascertained. Much local inflammation and fever set in on the following day, associated with severe pain. The operation of excision, which had been determined upon, was postponed owing to the doubt as to the position of the bullet. During the succeeding six days the local inflammation and pain were severe, and the patient begged me to remove his arm. On the 10th December, he was again placed under chloroform, and the operation for excision by one long incision was commenced. After making this incision and carrying out the usual dissection, the structures above and below the elbow for at least two inches were found infiltrated with pus, which poured out in large quantities; and when the olecranon was sawn off and the joint opened, the lower end of the humerus was found smashed into four pieces, the fractures extending high up the shaft. As excision was now out of question, a tourniquet was applied, and the arm removed by transfixion below the centre and about one inch and a half above the cul-de-sac, which has been mentioned before. The flaps were very muscular, but looked healthy. The stump was then carefully examined but no trace of any foreign body or sinus could be discovered. The flaps were, therefore, adjusted in the usual manner and the patient removed from the table.

The amputated arm was then placed on the table for examination. The long sinus, into which the bullet originally passed, and which admitted the little finger, terminated blindly in the inner head of the triceps. A long incision was then made down the forearm, and a quantity of pus immediately oozed out. On deepening this incision a large abscess was

exposed between the deep and superficial layer of muscles, and lying at the bottom of this, bathed in pus, the bullet, a small spicula of bone, and a piece of cloth were discovered. A second small detached piece of lead was found a little lower down. The bullet weighed 2 drachms and 45 grains.

The after-progress of this case was unsatisfactory, although the patient had been placed in a tent on account of erysipelas having appeared in the hospital. On the 17th December, erysipelas showed itself, and, notwithstanding the free application of a strong caustic solution, the inflammation extended beyond the shoulder and down over the scapula. The ligatures, however, came away without difficulty, and two-thirds of the stump healed. Still the patient, although relieved much at first by the operation, constantly suffered from fever, associated with furred tongue, want of appetite, pain in the stump and below the shoulder joint; and, towards the end of December, these symptoms increased, and the stump became swollen and œdematous as far as the shoulder joint, and the case looked as if the whole of the humerus had necrosed. Dead bone was found on probing the unhealed sinuses of the stump. Fomentations were constantly applied, and on the 3rd January, 1877, a grooved needle was passed in about two inches below the shoulder joint discovering exposed bone. A free opening was then made and six ounces of pus let out. This opening was enlarged a day or two afterwards. Great and temporary relief followed the exit of the matter, which was very copious for several days, but it decreased gradually until the opening eventually closed. A probe passed in from below traversed the whole length of the cylinder of the bone. Notwithstanding this, on the 15th of January, it is noted that all the previous swelling has disappeared, and the stump has shrunk and contracted, the discharge from the sinuses is exceedingly small, and no pain is complained of. The patient after this complained of severe pain in the right side, near the angle of the scapula,

where the skin was red superficially and slightly swollen, and rough respiration was heard underneath. On 8th January, a consultation was held with Dr. Macarthy, of the 70th Foot, as to whether the arm should be removed at the shoulder joint; but the condition of the patient was considered unfavorable, and it was decided to leave the man alone for the present. The pain near the scapula continued to increase, and was so severe that large doses of morphia hardly gave relief. On 20th January, a violent attack of dysentery exhausted a great deal of his remaining strength. He, however, recovered from this. On 28th January, fluctuation at the back of the scapula and deeply in the right axilla was distinct, and a large quantity of matter was let out. That night severe pain set in over the whole of the right side, the patient grew weaker, and as a last resource he was sent out to his 'kirí,' under the care of a vaccinator, with the hope that a change of air might benefit him. I, however, heard from his brother that he died at the kirí seven days afterwards with all the symptoms of empyema during the last few days of his existence.

The doubt as to the position of the bullet was a great and serious obstacle to a successful treatment of this case. At the time of admission, 3rd December, eight days after the receipt of the wound, the patient exhibited no constitutional symptoms except severe pain, and it was only after the prolonged and futile examination with the finger and probe that those unfavorable symptoms developed themselves which eventually led, I believe, to the death of the whole of the humerus by the extension of the inflammation up the shaft. Believing with the patient that the bullet was imbedded high up, probably in the shaft of the humerus, the operation for excision, which after this examination seemed imperative, was postponed with the hope that the position of the bullet would become more evident after suppuration had commenced. But it was only after the commencement of the preliminary steps of this operation that

moving camp.

the serious extent of the fracture, the uselessness of excision, and the large amount of local inflammation, were revealed. The after-examination of the arm showed that the track of the bullet was completely closed by a portion of the cancellated structure of the humerus which had become wedged in. This delay was fatal, and one more case has been added to the statistics of the fatal results of secondary amputations after gunshot wounds.

Bullet wound in face and skull.

Case III.—Mahín, ætat 28, was admitted on December 3rd, with a bullet wound in the face and skull.

This man was suddenly surprised by one of the enemy who had slipped down unperceived from a rock above him, and as he quickly raised his head a bullet fired from above struck him on the right side of the face and passed out about half an inch above the right ear. The man fell forward upon his face as if dead, and was removed afterwards by his friends.

On admission, eight days after the receipt of the injury, the patient was in a drowsy, lethargic condition, but he could be roused and would answer questions. He had a troublesome cough and his body was wasted. The right side of his face was much swollen. One small bullet wound was present on the right of the nose, and a second oval and larger opening was situated about half an inch above the right ear. A probe could be passed in from the lower opening in the direction of the upper for several inches, but the openings could not be connected. The right eye-ball was enormously swollen from extravasated blood, the conjunctiva was injected, and vision was completely lost. The pupil was dilated and active. He had no other injury. The wounds were dressed with carbolic lotion and carefully syringed out twice a day, and his pneumonic symptoms were treated in the usual way. A few days after admission symptoms of erysipelas showed themselves, but

were arrested by the application of leeches and the administration of calomel. This attack was followed by dysentery which passed into diarrhœa, and reduced his strength considerably. His wound, however, progressed favorably, and the swelling of the eyeball gradually decreased. Pus was freely discharged from both openings, and the lotion syringed through one opening passed out of the other. On the 15th December, pus began to flow from the right ear, in small quantities at first, but afterwards in considerable quantity. On the 22nd it is noted:—Complains of pain all over the head. The sight of the right eye has returned with the gradual diminution of the swelling of the eye-ball, but the action of the pupil is sluggish. The discharge of pus from the right ear is very free. One small piece of bone has been removed through the wound in the cheek. There is no paralysis of the left side.

The patient slowly recovered strength, and his faculties remained clear. The internal mischief to the bones must have been severe, as a lotion injected into the original wounds passed after a time into the nose and also into the mouth near the soft palate. At his own request he was discharged to his 'kiri' which was near the hospital, as the injured portions of bone were not in a fit state to bear removal for some time. He was then able to walk about.

Sword wounds in arm.

Case IV.—Afghan, ætat 20, was admitted on December 3rd, 1876, with three gaping sword wounds of the left arm. The humerus was uninjured. There is nothing of interest to note in this case, except that his recovery was also retarded by an attack of dysentery. The wounds slowly healed under carbolic oil treatment, and he was discharged on the 11th January, 1877.

Sword wounds in skull and elbow joint.

Case V.—Abdullah Khan, ætat 45, was admitted with severe sword wounds, and was a fine type of a Povindah. In spite of the severity of his injuries he appeared hale and cheerful, and

smiled grimly while his wounds were being examined His left elbow had been widely laid open by a sword stroke which had completely cut off the outer condyle of the humerus. He had also two flesh wounds on the forearm. His right index finger had been cleanly sliced off obliquely at the apex of the metacarpal bone. On the left side of his skull a compound fracture was however, the most serious of his wounds. The fractured surface occupied irregularly nearly two square inches of surface, the wound in the skin being irregular and jagged, and was, according to his statement, the result of five sword cuts. He remained insensible on the field for four hours, and for several hours after recovering consciousness his right leg was weak as if asleep. This symptom has not since returned.

At the time of admission he was in perfect health. His head had been protected by a portion of fresh sheepskin changed every second or third day, and the wounds on the extremities had been treated with attah, ghee, and huldi poultices. Loose bone was discovered with the probe, and the pulsation of the dura mater could be seen at one corner of the wound. As this wound, which appeared very serious, was progressing favorably under his own treatment, and bearing in mind the fatal termination of case No. I., I proposed to the man that his own treatment should be continued, but he begged that the hospital remedies might be applied. His skull wound was therefore dressed twice a day with weak carbolic lotion, and all the wounds on the extremities with carbolic oil; his left arm having been first placed in a prone position on a splint so as to close the large gap at the elbow as much as possible. On the 3rd day after the commencement of this treatment he became feverish and anxious, and complained of pain in the wound of the skull. The carbolic dressings were then removed from the wound in the skull and part of a fresh sheepskin applied around the head, and all the unpleasant symptoms passed away. This skin was changed every day. After the removal of two small pieces of bone from the skull, and several days having elapsed,

the sheepskin previous to application, was rubbed inside with carbolic acid lotion. This treatment was carried out until he left the hospital. On January 7th, a piece of the whole thickness of the skull about one square inch ($1\frac{5}{8}'' \times 1''$) in size came away. The patient for the first time became depressed, and thought he must necessarily die on account of the hole which had been formed in his head. The wound, however, closed rapidly, and he was discharged to his 'kiri' on January 26th, 1877. In February, he again presented himself, all his wounds having completely healed with the exception of one or two small points about the elbow. His left arm was bent at about an angle of 70° and he had slight movement in it.

It was my original intention to have excised this man's elbow, but the severe nature of the wound in the skull prevented the administration of chloroform, and the patient was afterwards unwilling to submit to the operation. He will probably recover very fair use of the limb.

Bullet wound in buttock.

Case VI.—Ayúb, ætat 30, was admitted on December 9th, 1876, with a bullet wound in the left buttock, the bullet having lodged near the rectum. He stated that he had been struck, when standing, by a shot fired sideways, and that blood passed by the rectum for 24 hours afterwards, and pain was experienced during defecation. A circular granulating wound, about one inch in diameter, was visible over the left buttock about midway between the crest of the ileum and the great trochanter. The surface was granulating over, and as a probe could not be passed an incision one inch in length was made across it; but no tract could be discovered. Digital examination of the rectum revealed nothing. As the patient presented no constitutional symptoms, and as the opening had completely closed, no further treatment was adopted, and the man was discharged as soon as the wound had skinned over. The patient thought it probable that the bullet had made its exit through the rectum. Should the bullet

still remain, it will probably eventually find its way through this passage, and the patient will have escaped the danger that might have resulted had a deep exploring wound been made in the buttock.

Bullet wound in forearm.

CASE VII.—Khundya Khan, ætat 22, was admitted on the 4th January, five weeks after the receipt of the injury, with a bullet wound in the right forearm. The bullet had entered the radius on its dorsal aspect, about two inches above the wrist joint, and passed obliquely through it, making a complete hole, big enough to admit the tip of the little finger, but not causing a fracture. The lower part of the arm was much thickened and swollen, but the man had no constitutional symptoms. As loose bone was discovered, the man was placed under chloroform and both wounds were freely laid open. Several spiculæ of bone were removed and the periosteum was found denuded for a considerable length below. The wounds were plugged with carbolic oiled lint. On the 14th January he left the hospital at his own desire, the wounds showing a tendency to heal kindly.

January 31st, he again presented himself. The lower wound had completely healed, the upper one had nearly closed, and he had fair movement of the arm. Three weeks afterwards, when out driving, I met this man, and he waved his hand gaily round his head to show how well he could use it. A point of interest in this case is the fact of the bullet having passed completely through the radius without causing a definite fracture.

Bullet wound in forearm.

CASE VIII.—On December 19th, a Waziri hostage, ætat 20, was admitted with what apparently looked like necrosis of the radius. He, however, stated that three years previously he had been struck with a bullet in the right forearm. As the probe discovered exposed bone, the man was placed under chloroform and an incision made down to the bone over the position of the sinus,

when a bullet, with a small specula of bone, was discovered imbedded in a cavity in the radius, and both were removed without difficulty. The bone around this opening was partially based of periosteum. The wound, however, healed rapidly and perfectly. I have seen the patient since his discharge, and he has recovered the perfect use of his arm. The weight of the bullet was two drachms and four grains.

The fatal result of the first two cases that have been recorded, makes one pause and reflect whether their termination would have been different had these men been treated on the spot in their own rude blanket or grass huts; and without casting any reflection upon the skill of the European surgeon in whose hands the Povindah places his life with the most amusing confidence, I cannot but think that one of the causes of these fatal results was contamination by the impure air of the hospital. Inured from his infancy to fatigue and exposure in yearly marches with merchandise from Khorásán to the Punjab, Hindustan, and Bengal; brought up from childhood to the use of arms, and accustomed to constant attacks from the marauding Waziri tribes (through whose country he passes) as well as from hostile tribes of his own country; ruddy in complexion, bold in appearance, large in stature, and powerfully developed, the Povindah is a fine combination of strength, endurance, and bravery. Scars of the most serious wounds, such as joints laid open, bones gashed, important structures divided, which nearly one out of every five Povindahs can show on his person, demonstrate how kindly Nature, without the aid of surgical art, and backed by a strong constitution, heals their wounds; and I believe that in his own hills, allowing for exceptional cases, a Povindah would hardly ever succumb to a wound that was not necessarily mortal. Yet, although these wounds heal so kindly, without proper surgical skill, limbs are thereby often left deformed and useless. It is, therefore, with real and philanthropic pleasure that the British surgeon, quartered in this portion of our North-West border (in

these days of go-aheadiness in our frontier policy, and when our relations in this district with the Waziri tribes have arrived at a perfection never before attained) can look forward to the time when he will be able to march without danger through these hills, and give to the Povindah, at a time when he most needs it, the assistance of his art.

April 21*st*, 1877.